

# Prevention and Management of Cardiovascular Disorders through Ayurveda and Yoga: A Systematic Review

Farhatunnisa Syed<sup>1\*</sup>, Manore Deepali<sup>2</sup>, Raj Kumar Bobade<sup>3</sup>

P. G. Scholar<sup>1</sup>, Associate Professor<sup>2</sup>, Professor & HOD<sup>3</sup>, Department of Swasthivritta<sup>1,2,3</sup>, PDEA'S College of Ayurved and Research Centre, Nigdi, Pune, Maharashtra, India-412044

## Corresponding Author:

Farhatunnisa Syed

E-mail: drfarhat.yogayurved@gmail.com



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## Abstract

The world is facing an increasing burden of cardiovascular disorders (CVD), which account for 31% of global deaths. Risk factors include hypertension, diabetes, dyslipidemia, and overweight, all driven by lifestyle disorders. In India, ischemic heart disease (IHD) is the leading cause of death, according to the WHO's 2012 statistical profile, followed by CVD and diabetes as major contributors to the national disease burden. Ayurveda and Yoga, with their holistic approaches, offer promising solutions for the prevention and management of CVD. This systematic review evaluates the impact of Ayurvedic principles such as Dinacharya, Ritucharya, and Rasayana, alongside Yogic practices, on CVD management. Key Ayurvedic herbs, lifestyle changes, and yoga techniques have shown potential in both disease prevention and reversal. The article discusses how integrating these traditional therapies with modern lifestyle adjustments can mitigate the risk and progression of CVD.

**Keywords:** Ayurveda, Yoga, cardiovascular disorders, lifestyle management, holistic medicine

## Introduction

Cardiovascular diseases (CVD) are the leading cause of mortality globally, with 17.5 million deaths annually.<sup>(1-3)</sup> The incidence of CVD is rising in India, with urban populations being particularly vulnerable due to lifestyle changes, sedentary habits, and unhealthy diets.<sup>(5-8)</sup> Ayurveda, an ancient system of medicine, provides a framework for maintaining health through holistic practices. This review aims to evaluate the role of Ayurveda and Yoga in the prevention and management of CVD, focusing on primordial, primary, and secondary prevention.<sup>(8-13)</sup>

## Methodology

This review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Studies focusing on the use of Ayurvedic and Yogic interventions in the prevention and management of CVD were included. Data were collected from various databases, including PubMed, Google Scholar, and traditional Ayurvedic texts. The search terms used were "Ayurveda," "Yoga," "Cardiovascular Disorders," "Hypertension," "Diabetes," "Lifestyle Management," and "Holistic Medicine."

## Inclusion Criteria:

- Studies published between 2000 and 2023
- Research on Ayurvedic and Yogic interventions for CVD prevention or treatment
- Articles in English

## Exclusion Criteria:

- Studies focusing solely on pharmaceutical interventions without integrating lifestyle changes
- Case studies with inadequate follow-up

**Data Extraction and Synthesis:** Two independent reviewers screened the articles for relevance based on titles and abstracts. Full texts of potentially eligible studies were retrieved and assessed for methodological quality using the Cochrane Risk of Bias tool. Data were synthesized through a qualitative approach, given the heterogeneity of interventions and outcomes.

## Results

Thirty-two studies were identified that met the inclusion criteria, examining the effectiveness of Ayurvedic interventions and yoga practices in managing cardiovascular disease (CVD) and associated risk factors like hypertension and dyslipidemia. These studies explored various holistic approaches, including traditional Ayurvedic lifestyle recommendations and yoga, focusing on both prevention and management of CVD at different stages.

**Ayurvedic Interventions:** Ayurveda, with its foundational principles of balancing the body's doshas (Vata, Pitta, Kapha), offers a range of interventions aimed at promoting overall health and preventing disease. Three key Ayurvedic regimens were found to be particularly effective in managing cardiovascular health:

- **Dinacharya (Daily Regimen):** This refers to a structured daily routine that promotes a balanced lifestyle through habits such as waking early, regular meal timings, proper sleep, and cleansing practices. Studies showed that adhering to a Dinacharya helped regulate bodily functions, improving heart health by reducing stress and maintaining the equilibrium of the body's systems, which is essential for preventing conditions like hypertension and high cholesterol.
  - **Ritucharya (Seasonal Regimen):** Ayurveda recognizes that seasonal changes affect the body's doshas, and adjustments in lifestyle, diet, and exercise should be made accordingly. Ritucharya offers season-specific guidelines to maintain balance throughout the year. Studies indicated that following Ritucharya helps in mitigating fluctuations in blood pressure and lipid levels, particularly during seasonal transitions when these risk factors can be exacerbated.
  - **Rasayana (Rejuvenation Therapies):** Rasayana therapies are designed to rejuvenate the body, promote longevity, and strengthen the immune system. These therapies often involve the use of specific herbal formulations and lifestyle modifications to maintain and restore the body's vitality. Studies demonstrated that Rasayana therapies, such as the use of Ashwagandha, Brahmi, and Amla, were effective in managing hypertension and improving lipid profiles, thus contributing to better cardiovascular outcomes. The rejuvenating effects of Rasayana also help in reducing oxidative stress, a major contributor to CVD.
- Lifestyle Recommendations:** In addition to these regimens, key lifestyle practices rooted in Ayurveda were found to be beneficial for heart health:
- **Abhyanga (Oil Massage):** Regular oil massage with medicated oils helps pacify Vata dosha, improve circulation, and reduce stress. Studies showed that Abhyanga contributed to lower blood pressure and improved arterial function, promoting cardiovascular wellness.
  - **Vyayam (Exercise):** Moderate physical activity, as recommended in Ayurveda, plays a crucial role in maintaining heart health. Ayurvedic texts emphasize exercising according to one's strength and constitution to balance doshas and maintain vitality. Studies confirmed that regular, moderate exercise improved heart health by reducing body weight, enhancing lipid metabolism, and controlling blood pressure.
  - **Dietary Modifications:** Ayurveda stresses the importance of a balanced diet tailored to an individual's constitution (Prakriti). Specific dietary

recommendations, such as reducing fatty, processed foods and incorporating heart-friendly foods like whole grains, fruits, and herbs like turmeric and garlic, were shown to improve cardiovascular markers. These dietary modifications helped manage dyslipidemia and supported the overall balance of doshas, leading to enhanced heart function.

**Yoga's Role in Cardiovascular Health:** Yoga, with its comprehensive approach combining physical, mental, and spiritual practices, was highlighted across multiple studies as an effective tool in managing CVD. The integration of physical postures (Asanas), breathing techniques (Pranayama), and meditation was found to significantly improve cardiovascular parameters.

- **Asanas (Physical Postures):** Regular practice of specific postures, such as **Tadasana** (Mountain Pose), **Vrikshasana** (Tree Pose), and **Shavasana** (Corpse Pose), helped enhance flexibility, reduce stiffness, and improve circulation. These asanas were shown to lower blood pressure, improve heart rate, and reduce stress—factors crucial for maintaining cardiovascular health. The calming effects of Shavasana, in particular, were noted for their stress-relieving benefits, which have a direct impact on blood pressure control.
- **Pranayama (Breathing Techniques):** Techniques such as **Anulom-Vilom** (alternate nostril breathing) and **Bhramari** (humming bee breath) were found to have a profound effect on cardiovascular function. Pranayama practices help in oxygenating the body, improving lung function, and regulating the autonomic nervous system, all of which contribute to reduced blood pressure and improved lipid profiles. Regular practice was shown to enhance heart rate variability, a marker of cardiovascular health.
- **Meditation:** Meditation practices in yoga, particularly when combined with Pranayama, were shown to reduce stress—a major risk factor for CVD. Studies highlighted that regular meditation improved mental clarity, emotional well-being, and reduced the impact of chronic stress on the cardiovascular system, leading to better heart health outcomes.

### Preventive Applications of Ayurveda and Yoga:

- **Primordial Prevention:** Several studies emphasized the value of early lifestyle interventions, as outlined in Ayurveda's **Dinacharya** and **Sadvritta** (ethical conduct). By promoting balanced physical and mental health, these practices help prevent the onset of cardiovascular disease. The holistic focus on mindfulness, proper nutrition, and ethical living ensures

that risk factors like hypertension and dyslipidemia are managed before they manifest into clinical conditions.

- **Primary Prevention:** Evidence supported the role of yogic practices in reducing cardiovascular risk factors before they develop into full-blown disease. **Pranayama** and **meditation**, in particular, were noted for their ability to improve heart rate variability and lower blood pressure, which are crucial in the early stages of disease prevention. Regular yoga practice was found to have a positive impact on reducing inflammation, improving endothelial function, and enhancing lipid profiles—all important in primary prevention strategies.
- **Secondary Prevention:** For individuals already diagnosed with CVD, Ayurvedic herbs like **Arjuna** and **Ashwagandha** were found to be beneficial in conjunction with yoga. Arjuna, known for its cardioprotective properties, helped in managing symptoms of hypertension and improving heart function. Ashwagandha, an adaptogenic herb, aided in reducing stress and improving overall heart health. Studies showed that combining these herbs with regular yoga practices could reverse the progression of CVD, improving outcomes in patients with hypertension, diabetes, and atherosclerosis.

### Discussion

This review demonstrates the effectiveness of integrating Ayurvedic lifestyle practices and Yoga for the prevention and management of CVD.<sup>(14-17)</sup> Ayurveda's focus on Dinacharya and Ritucharya helps in the primordial prevention of CVD by promoting a disciplined lifestyle. Yoga, with its proven benefits in stress management, offers a natural way to manage risk factors such as hypertension and diabetes.<sup>(18-22)</sup>

The studies reviewed suggest that combining Ayurvedic and Yogic therapies can be a cost-effective, non-pharmacological approach to mitigating the risk of CVD. However, more large-scale, randomized controlled trials are needed to establish the long-term efficacy of these interventions.<sup>(23-27)</sup>

**Limitations:** This review was limited by the heterogeneity of study designs and intervention protocols, which made quantitative synthesis challenging. Additionally, many studies had small sample sizes or short follow-up periods.

### Conclusion

Ayurveda and Yoga offer promising complementary approaches to conventional cardiovascular therapies. Their combined use in lifestyle modification, stress management, and disease prevention may contribute to reducing the global burden of CVD. Future research should focus on standardizing intervention protocols and evaluating their long-term impact through larger clinical trials.

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